Release notes for ENDF/B Development n-009_F_019 evaluation

April 26, 2017

- `fudge-4.0` Warnings:

  1. FIXME: Another genuine fudge bug!
     (Error # 2): Fudge check bug

     ```
     FAILURE: ENDF EVALUATION CHECKING HALTED BECAUSE 'database' object has no attribute 'check''database' object has
     ```

  2. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
     Section 0 (total): / Form 'eval': (Error # 0): Condition num.

     ```
     WARNING: Ratio of smallest/largest eigenvalue (9.688295e-10) is too small
     ```

  3. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
     Section 2 ((z,n)): / Form 'eval': / Component 0 (Error # 0): Condition num.

     ```
     WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
     ```

  4. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
     Section 2 ((z,n)): / Form 'eval': / Component 1 (Error # 0): Condition num.

     ```
     WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
     ```

  5. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
     Section 2 ((z,n)): / Form 'eval': / Component 2 (Error # 0): Condition num.

     ```
     WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
     ```

  6. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
     Section 6 (n + n + F18 + gamma): / Form 'eval': / Component 0 (Error # 0): Condition num.

     ```
     WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
     ```

  7. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
     Section 6 (n + n + F18 + gamma): / Form 'eval': / Component 1 (Error # 0): Condition num.

     ```
     WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
     ```

  8. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
     Section 9 (n + He4 + N15 + gamma): / Form 'eval': / Component 0 (Error # 0): Condition num.

     ```
     WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
     ```

9. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 9 (n + He4 + N15 + gamma): / Form 'eval': / Component 1 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

10. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 11 (n + H1 + O18 + gamma): / Form 'eval': / Component 0 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

11. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 11 (n + H1 + O18 + gamma): / Form 'eval': / Component 1 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

12. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 12 (F20 + gamma): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (5.900142e-11) is too small
```

13. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 13 (H1 + (O19_s ->O19 + gamma)): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

14. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 14 (H2 + O18_s): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

15. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 15 (H3 + O17_s): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

16. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 16 (He4 + (N16_s ->N16 + gamma)): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

- `fudge-4.0` Errors:

1. Exception AttributeError was thrown
   FAILURE: ENDF EVALUATION CHECKING HALTED BECAUSE 'database' object has no attribute 'check"database' object has no attribute 'check' (Error # 1): AttributeError

```
AttributeError: 'database' object has no attribute 'check'
```

- `njoy2012` Warnings:

1. The cross section is nonzero at threshold
   reconr...reconstruct pointwise cross sections in pendf format (0): Sig(Eth)>0

```
 ---message from lunion---xsec nonzero at threshold for mt= 51
                          adjusted using jump in xsec
```

2. The cross section is nonzero at threshold
   reconr...reconstruct pointwise cross sections in pendf format (1): Sig(Eth)>0

```
 ---message from lunion---xsec nonzero at threshold for mt= 52
                          adjusted using jump in xsec
```

3. This nuclide has no URR and NJOY is upset about it
   unresr...calculation of unresolved resonance cross sections (0): No URR

```
 ---message from unresr---mat  925 has no resonance parameters
                          copy as is to nout
```

4. This nuclide has no URR and NJOY is upset about it
   purr...probabalistic unresolved calculation (0): No URR

```
 ---message from purr---mat  925 has no resonance parameters
                          copy as is to nout
```

5. Coefficient mismatch of some sort
   covr...process covariance data (1): COVR/matshd (2)

```
 ---message from matshd---processing of mat/mt  925/  4 vs. mat1/mt1  925/ 22
                          largest coefficient=  1.11167E+00 at index 506 525
```

6. The number of coefficients was too large in a covariance
   covr...process covariance data (2): Cov:Too many coeff.

```
 ---message from matshd--- 252 coefficients > 1
                          reset and continue.
```

7. Coefficient mismatch of some sort
   covr...process covariance data (3): COVR/matshd (2)

```
 ---message from matshd---processing of mat/mt  925/ 16 vs. mat1/mt1  925/ 22
                          largest coefficient=  1.10152E+00 at index 618 555
```

8. The number of coefficients was too large in a covariance
   covr...process covariance data (4): Cov:Too many coeff.

```
 ---message from matshd--- 448 coefficients > 1
                          reset and continue.
```

9. Coefficient mismatch of some sort
   covr...process covariance data (5): COVR/matshd (2)

```
---message from matshd---processing of mat/mt  925/ 22 vs. mat1/mt1  925/ 28
                        largest coefficient=  1.12375E+00 at index 555 602
```

10. The number of coefficients was too large in a covariance
    covr...process covariance data (6): Cov:Too many coeff.

```
---message from matshd--- 704 coefficients > 1
                        reset and continue.
```

- `acelst` Warnings:

1. generic warning message
   0: Warning

```
ACELST WARNING - More than one range for MF/MT           6          16
 Formatting of MF6 not coded for MT          22  Law          61
```

- `xsectplotter` Errors:

1. Exception IndexError was thrown
   (Error # 3): IndexError

```
IndexError: index out of range
```